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BEFORE THE

Federal Communications Commission

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Amendment of Parts 2, 25 and 97 of the	)	**ET Docket No. 98-142**
Commission's Rules with Regard to the	)	
Mobile Satellite Service Above 1 GHz	)	

To: The Commission

REPLY COMMENTS
OF THE
AMERICAN PETROLEUM INSTITUTE

The American Petroleum Institute ("API"), pursuant to Section 1.415(c) of the Rules and Regulations of the Federal Communications Commission ("FCC" or "Commission"), by its attorneys, hereby respectfully submits these Reply Comments regarding Comments filed by other interested parties in response to the Notice of Proposed Rule Making ("Notice") adopted by the Commission in the above-styled proceeding.[1/]

[1/] See Notice of Proposed Rule Making, FCC 98-177 (released August 4, 1998); 63 Fed. Reg. 44597 (August 20, 1998).

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I. PRELIMINARY STATEMENT

1. API is a national trade association representing approximately 300 companies involved in all phases of the petroleum and natural gas industries, including exploration, production, refining, marketing, and transportation of petroleum, petroleum products and natural gas. Among its many activities, API acts on behalf of its members as spokesperson before federal and state regulatory agencies. The API Telecommunications Committee is one of the standing committees of the organization's Information Systems Committee. The Telecommunications Committee evaluates and develops responses to state and federal proposals affecting telecommunications services and facilities used in the oil and gas industries.

2. In its Notice, the Commission proposed to, among other things, allocate to the Fixed-Satellite Service ("FSS") the 6700-7075 MHz band on a co-primary basis for space-to-Earth ("downlink") transmissions.[2/] The Commission further proposed to limit the use of this new FSS allocation for Non-Geostationary Satellite Orbit Mobile-Satellite Service (NGSO MSS) feeder links. The Commission said in its Notice that the proposed allocation of the 6700-7075 MHz band for co-primary use by the FSS is designed to provide spectrum required by FSS and to harmonize the U.S. domestic frequency

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[2/] API is not concerned with other proposals made in the Notice with respect to the bands 5091-5250 MHz and 15.43-15.63 GHz.

allocation with actions taken at the 1995 World Radiocommunications Conference ("WRC-95").

3. The API member companies are particularly interested in this proceeding because many of them hold FCC licenses with links authorized in a portion (i.e., the *upper* 6 GHz Private Operational-Fixed Service band), a portion of the spectrum under consideration in this matter. Many of these licensees have multiple links in the *upper* 6 GHz band; and, accordingly, they are concerned with the manner in which this allocation may be shared with other services.

II. REPLY COMMENTS

A. The *Upper* 6 GHz Band Should Be Protected as Replacement Spectrum

4. The *upper* 6 GHz band (6525-6875 MHz), as well as the *lower* 6 GHz band (5925-6425 MHz), represent the principal spectrum used for long-haul, point-to-point microwave communications for both common carriers and private operational-fixed operators. As reported in the Comments of the Fixed Point-to-Point Communications Section, Network Equipment Division, of the Telecommunications Industry Association (the "Fixed Section"), there are currently 3,032 common carrier and 25,744 privately used

frequencies licensed in the 6525-6875 MHz band.[3/] The *upper* 6 GHz is not only heavily occupied now, but it will be a preferred band for the relocation of 2 GHz and 2.1 GHz licensees, as they continue to be displaced from their existing assignments. The bands higher than the *upper* 6 GHz band (i.e., 10 GHz, 18 GHz and higher) are very much less suitable for long haul, point-to-point microwave systems.

5. Because of the fundamental involvement of communications in every phase of petroleum and natural gas production, refining and pipeline transportation, it is difficult to quantify the importance of these *upper* 6 GHz facilities in monetary terms. The unquantifiable value of these systems is exemplified by the significant public safety attributes of these petroleum and natural gas communications systems. For example, if a pipeline is operating at an excessive level of pressure at one point along the route, the communications systems operated by API members in the *upper* 6 GHz band are capable of monitoring this level, detecting abnormalities, and responding by remotely controlling the valve system throughout tens of thousands of miles of pipeline in this nation. Information from Supervisory Control and Data Acquisition ("SCADA") systems, common throughout the industry, is transmitted over these microwave systems. Without this reliable information, the likelihood of pipeline ruptures, with their attendant health and environmental consequences, would be dramatically increased. A growing number

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[3/] Fixed Section at p. 3.

of these *upper* 6 GHz links have replaced facilities previously operated in the 1.8 GHz and 2.1 GHz bands, which have been reallocated for Emerging Technologies, including Personal Communications Service ("PCS") and Mobile Satellite Service ("MSS"). As a result of these reallocations, the Commission has identified the 6 GHz bands, as well as the 18 GHz band, as relocation spectrum for FS users compelled to vacate their assignments in the 2 GHz region of the spectrum.

6. It is in the Commission's own interest to protect this critical relocation spectrum. The ability of the Commission to meet ever increasing spectrum demands, whether through auction or some other process, depends on having adequate spectrum, protected from interference, with which to relocate displaced licensees. This is not only true for the ongoing and continued relocation of licensees from the 1850-1990 MHz band, but will be equally as important for the ultimate relocation of 2.1 GHz terrestrial licensees.

B. Co-Primary Rules Should be Co-Equal Among the Services

7. As discussed in the Comments of the Fixed Section,[4/] the prior experience of allocating the 4 GHz band (3700-4200 MHz) to the satellite service on a co-primary basis with the fixed service raises concerns relative to the instant proposal for a similar

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[4/] Ibid. at pp. 2 and 3.

allocation. The "sharing" premise of the 4 GHz allocation was based on "few" earth stations, located principally at distances sufficiently removed from major metropolitan areas so as not to impose a major impact on existing microwave facilities in terms of potential interference. In recent discussions at meetings of both the National Spectrum Managers Association ("NSMA") and the Fixed Wireless Communications Coalition ("FWCC"), it was reported that it is now extremely difficult to coordinate new 4 GHz terrestrial point-to-point microwave systems because satellite earth stations have "sterilized" the band. This sterilization is caused by two coordination policies that favor satellite earth station coordination: (1) earth stations are coordinated "full arc, full bandwidth," regardless of operating parameters; and (2) satellite licensees "accept" higher than normal calculated interference levels from existing terrestrial systems in order to obtain earth station coordination, then "do not accept" those same levels from proposed terrestrial systems.[5/]

8. API agrees with the Fixed Section that satellite licensees should be required to justify the bandwidth requested and meet similar bandwidth efficiency requirements as are imposed on fixed service licensees.[6/] API acknowledges certain

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[5/] These coordination policies were acknowledged by microwave frequency coordinators at recent NSMA Working Group 3 meetings. NSMA Working Group 3 develops coordination procedures for intra- and inter-service sharing.

[6/] Ibid. at p. 6.

advantages of satellite technology, but believes that satellite services should not be given regulatory advantages that are not available to the fixed services. To that end, the technical advantages of terrestrial systems (i.e., spectral efficiency due to modulation efficiencies and geographical frequency reuse) should not be compromised. The cost benefit of satellite technology should be demonstrated in the marketplace, and not be supported by regulatory deference.

C. Inter-Service Coordination Criteria Should Protect Existing Services

9. The power flux densities ("PFDs") proposed by the Commission in the Notice for the 6700-6825 MHz and 6825-7075 MHz bands are insufficient to protect terrestrial, point-to-point microwave systems from periodic outages. Even though the proposed PFDs were derived from the proceedings of WRC-97, they are sufficiently high enough to cause system outages whenever an interfering signal at the proposed PFD emanates from a satellite within 5° of the main beam axis of a microwave receiver antenna.[7/]

10. API joins the Fixed Section in urging the Commission to adopt coordination standards for new NGSO feeder links and terrestrial systems. Coordination standards and procedures should provide for sufficient protection of co-channel systems.

[7/] Ibid. at p. 5.

In order to facilitate evaluation of potential interference, the Commission should require that applicants for proposed satellite earth stations provide detailed technical parameters of their proposed systems for coordination and licensing purposes including, at a minimum: (1) PFDs for each relevant elevation angle range (i.e., 0°-5°, 5°-25° and 25°-90°) and frequency; (2) the total *necessary* downlink operating bandwidth per earth station; (3) the number of antennas per earth station and antenna parameters for each antenna; (4) earth station receiver characteristics; (5) orbit parameters; and (6) any proposed interference mitigating techniques to ensure future growth for the fixed services.

11. Earth station coordinations "cleared" because of agreed-to over-the-horizon or obstruction losses, or other caveats such as "accepting" higher interference levels, should set precedence for future proposed terrestrial systems. For example, if a building is considered to have 30 dB obstruction loss for an earth station coordination, that same building should be considered to have a 30 dB obstruction loss for future proposed terrestrial systems. Or, if a satellite licensee agrees to a "10 dB interference case" from an existing microwave system, future proposed terrestrial systems should be allowed that same 10 dB when coordinating with that earth station. As previously stated, the coordination process should not favor one service over another.

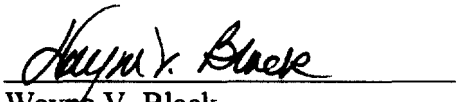
III. CONCLUSION

12. Notwithstanding the desirability to provide spectrum for emerging satellite services and to harmonize domestic U.S. spectrum allocations with International Telecommunications Union recommendations, the Commission should consider the impact of those allocations on existing domestic users, especially with respect to users employing microwave facilities in safety-related industries such as oil refineries, natural gas pipelines and electric utilities.

WHEREFORE, THE PREMISES CONSIDERED, the American Petroleum Institute respectfully submits the foregoing Reply Comments and requests the Commission to act in a manner fully consistent with these views.

Respectfully submitted,

AMERICAN PETROLEUM INSTITUTE

By: 

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Dated: October 5, 1998

CERTIFICATE OF SERVICE

I, Patt Meyer, a secretary in the law firm of Keller and Heckman LLP, do hereby certify that a copy of the foregoing REPLY COMMENTS OF THE AMERICAN PETROLEUM INSTITUTE has been served this 5th day of October, 1998 by mailing U.S. First-Class, postage prepaid, to the following:

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